

## Fiscal Highlights

### What Factors Predict Student Achievement the Best? - Thomas E. Young

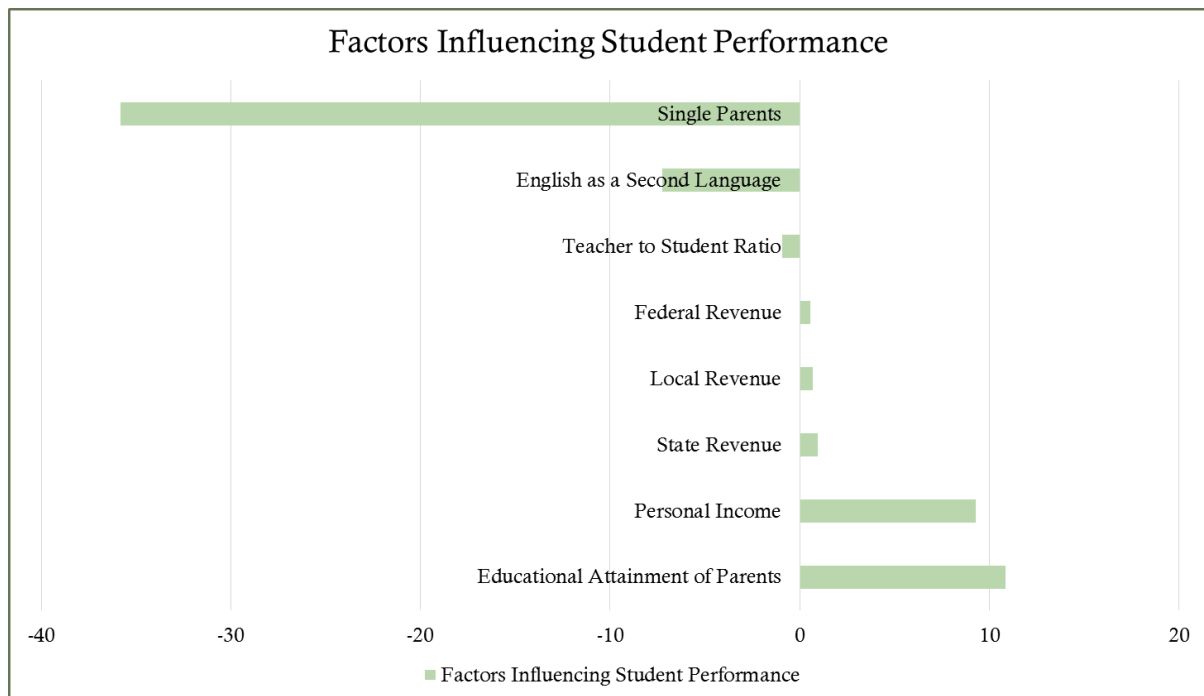
Based upon requests from Legislators, staff presented the Executive Appropriations Committee (EAC) with analysis of various factors that predict student performance the best.

The factors included:

- Single parent households (proxy for parental involvement),
- English language learners (proxy for student comprehension),
- The student-to-teacher ratio (proxy for educator engagement),
- Federal, state, and local spending (proxy for public resources),
- Personal income per capita (proxy for private resources), and
- Educational attainment of the parents (proxy for student motivation).

The variable to be predicted was students' performance on ACT or NAEP (National Assessment of Educational Progress) tests.

Overall, the results indicate that the best predictors of above-average student performance are educational attainment of the parents and personal income per capita. The best predictors for below-average student performance are the percentage of households headed by a single parent and the percentage of students counted as English language learners. The factors with small and generally insignificant results include the student-to-teacher ratio and spending (federal, state, local) per student.



The following animated GIFs show the relationship between the factors by state across time. On the vertical axis are four measures of student achievement: 4th and 8th grade NAEP math scores and 4th and 8th grade reading scores. On the horizontal axis are the various predictor measures (spending per student, educational attainment of the parents, etc.).

A relationship is formed if one could draw a line through the figures that's significantly different from zero. As an example, if one drew a line through personal income per capita and NAEP performance, it would be strongly positive, meaning that higher personal income per capita is correlated with better student performance on the NAEP scores.

Conversely, if one drew a line through spending per student, it's relatively horizontal, meaning the two are probably not related.

